

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of producing particles comprising:
providing:

a supercritical fluid;

a first solvent that is soluble in the supercritical fluid;

a second solvent that is substantially insoluble in the supercritical fluid and
is at least partially soluble in or miscible with the first solvent; and

a solute that is soluble in the first solvent and is substantially insoluble in
the second solvent and the supercritical fluid;

contacting the first solvent, the second solvent and the solute together to form a
solution; ~~and~~

contacting the solution with the supercritical fluid to extract the first solvent from
the solution and precipitate the solute in the form of particles that are
suspended in the second solvent; and

separating the particles suspended in the second solvent from the first solvent
dissolved in the supercritical fluid when the supercritical fluid is in a
supercritical state.

Claim 2 (original): The method according to claim 1 wherein the solute
comprises a biologically active substance.

Claim 3 (original): The method according to claim 1 wherein the supercritical
fluid is selected from the group consisting of supercritical carbon dioxide, dimethylether,
straight chain or branched chain C1-C6 alkanes and combinations thereof.

Claim 4 (original): The method according to claim 1 wherein the solution further comprises a plurality of solutes and wherein the particles suspended in the second solvent comprise the plurality of solutes.

Claim 5 (original): The method according to claim 4 wherein the plurality of solutes comprises a first solute comprising a biologically active substance and a second solute comprising an excipient selected from the group consisting of a polymer, a wax, a lipid and combinations thereof.

Claim 6 (original): The method according to claim 1 wherein the first solvent comprises an organic solvent.

Claim 7 (original): The method according to claim 6 wherein the first solvent is selected from the group consisting of dimethyl formamide, dimethyl sulfoxide, alcohols, acetone, ethyl acetate and chloroform.

Claim 8 (original): The method according to claim 1 wherein the second solvent is water.

Claim 9 (original): The method according to claim 1 wherein the average particle size of the particles suspended in the second solvent is from about 10 nm to about 10 μm .

Claim 10 (original): Particles formed according to the method of claim 1.

Claim 11 (currently amended): A method of producing particles comprising:
providing:

- supercritical carbon dioxide;
- an organic solvent that is substantially soluble in supercritical carbon dioxide;
- water; and

a biologically active substance that is soluble in the organic solvent and is substantially insoluble in water and supercritical carbon dioxide;
contacting the organic solvent, water and biologically active substance together to form a solution;~~and~~
contacting the solution with the supercritical carbon dioxide to extract the organic solvent from the solution and precipitate the biologically active substance in the form of particles that are suspended in water; and
separating the particles suspended in water from the organic solvent dissolved in the supercritical carbon dioxide when the supercritical carbon dioxide is in a supercritical state.

Claim 12 (original): The method according to claim 11 wherein the solution further comprises a second solute comprising an excipient selected from the group consisting of polymers, waxes, lipids and combinations thereof, and the particles suspended in water comprise the biologically active substance and the excipient.

Claim 13 (original): The method according to claim 11 wherein the organic solvent is selected from the group consisting of dimethyl formamide, dimethyl sulfoxide, alcohols, acetone, ethyl acetate and chloroform.

Claim 14 (original): The method according to claim 11 wherein the average particle size of the particles suspended in water is from about 10 nm to about 10 μ m.

Claim 15 (original): Particles formed according to the method of claim 11.

Claim 16 (currently amended): An apparatus for producing particles comprising:
an extraction vessel;
a first reservoir for holding a supply of supercritical fluid;
a first pump for pumping supercritical fluid from the first reservoir to the extraction vessel;
a second reservoir for holding a supply of solution, the solution comprising:

a first solvent that is soluble in the supercritical fluid;
a second solvent that is substantially insoluble in the supercritical fluid and
is at least partially soluble in or miscible with the first solvent; and
a solute that is soluble in the first solvent and is substantially insoluble in
the second solvent and the supercritical fluid;
a second pump for pumping solution from the second reservoir to the extraction
vessel;
a release valve for removing a mixture comprising ~~supercritical fluid and the first~~
solvent dissolved in the supercritical fluid from the extraction vessel when
the supercritical fluid is in a supercritical state to separate the first solvent
from particles of the solute suspended in the second solvent; and
means for removing particles of the solute suspended in the second solvent from
the extraction vessel.